



Photograph C-23: View of Stream (S)-1, an ephemeral stream, looking north (May 2013).



Photograph C-24: View of S-1, an ephemeral stream, looking south (June 2013).



Photograph C-25: View of S-2, an ephemeral stream, looking east (June 2013).



Photograph C-26: View of S-2, an ephemeral stream, looking east (June 2013).



Photograph C-27: View of PUB W-14, looking north (May 2013).

APPENDIX D - ORAM SUMMARY AND CHARACTERIZATION WORKSHEETS

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <u>NO</u>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <u>NO</u>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <u>NO</u>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <u>NO</u>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <u>NO</u>	If yes, Category 1.
	Question 6. Bogs	YES <u>NO</u>	If yes, Category 3.
	Question 7. Fens	YES <u>NO</u>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <u>NO</u>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <u>NO</u>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <u>NO</u>	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	<u>2</u>	
	Metric 2. Buffers and surrounding land use	<u>3</u>	
	Metric 3. Hydrology	<u>7</u>	
	Metric 4. Habitat	<u>8</u>	
	Metric 5. Special Wetland Communities	<u>0</u>	
	Metric 6. Plant communities, interspersion, microtopography	<u>6</u>	
	TOTAL SCORE	<u>26</u>	Category based on score breakpoints <u>1</u>

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category
 Choose one Category 1 Category 2 Category 3

End of Ohio Rapid Assessment Method for Wetlands.

W-14, Lake Avenue
ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	14	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersed, microtopography	7	
	TOTAL SCORE	39	Category based on score breakpoints <i>Modified 2</i>

Complete Wetland Categorization Worksheet.

W-14, Lake Avenue

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	<input checked="" type="radio"/> Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <u>NO</u>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <u>NO</u>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <u>NO</u>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <u>NO</u>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <u>NO</u>	If yes, Category 1.
	Question 6. Bogs	YES <u>NO</u>	If yes, Category 3.
	Question 7. Fens	YES <u>NO</u>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <u>NO</u>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <u>NO</u>	If yes, Category 3
Quantitative Rating	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <u>NO</u>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Metric 1. Size	<u>0</u>	
	Metric 2. Buffers and surrounding land use	<u>7</u>	
	Metric 3. Hydrology	<u>11</u>	
	Metric 4. Habitat	<u>8</u>	
Metric 5. Special Wetland Communities	<u>0</u>		
Metric 6. Plant communities, interspersed, microtopography	<u>8</u>		
TOTAL SCORE	<u>34</u>	Category based on score breakpoints <u>1 or 2 gray zone</u>	

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	<input checked="" type="radio"/> NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	<input checked="" type="radio"/> YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	<input checked="" type="radio"/> Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <u>NO</u>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <u>NO</u>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <u>NO</u>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <u>NO</u>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <u>NO</u>	If yes, Category 1.
	Question 6. Bogs	YES <u>NO</u>	If yes, Category 3.
	Question 7. Fens	YES <u>NO</u>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <u>NO</u>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <u>NO</u>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <u>NO</u>	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	<u>1</u>	
	Metric 2. Buffers and surrounding land use	<u>13</u>	
	Metric 3. Hydrology	<u>11</u>	
	Metric 4. Habitat	<u>14</u>	
	Metric 5. Special Wetland Communities	<u>0</u>	
	Metric 6. Plant communities, interspersions, microtopography	<u>4</u>	
	TOTAL SCORE	<u>43</u>	Category based on score breakpoints <u>Modified 2</u>

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	<input checked="" type="radio"/> NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	<input checked="" type="radio"/> YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc. and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category			
Choose one	Category 1	<input checked="" type="radio"/> Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

**APPENDIX E - OHIO EPA QUALITATIVE HABITAT EVALUTATION INDEX
AND USE ASSESSMENT SHEETS**

Stream & Location: Stream RM: Date: 06/06/06Scorer's Full Name & Affiliation: Gordon Shaw, Burns &
River Code: STORET #: Lat./Long.: 41 18 2 Office verified location ☐1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY		Substrate Maximum 20
<input type="checkbox"/>	BLDR /SLABS [10]	<input type="checkbox"/>		<input type="checkbox"/>	HARDPAN [4]	<input type="checkbox"/>		<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]	
<input type="checkbox"/>	BOULDER [9]	<input type="checkbox"/>		<input type="checkbox"/>	DETRITUS [3]	<input type="checkbox"/>		<input type="checkbox"/>	TILLS [1]	<input type="checkbox"/>	MODERATE [-1]	
<input type="checkbox"/>	COBBLE [8]	<input type="checkbox"/>		<input type="checkbox"/>	MUCK [2]	<input type="checkbox"/>		<input checked="" type="checkbox"/>	WETLANDS [0]	<input checked="" type="checkbox"/>	NORMAL [0]	
<input type="checkbox"/>	GRAVEL [7]	<input type="checkbox"/>		<input checked="" type="checkbox"/>	SILT [2]	<input type="checkbox"/>		<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]	
<input type="checkbox"/>	SAND [6]	<input type="checkbox"/>		<input type="checkbox"/>	ARTIFICIAL [0]	<input type="checkbox"/>		<input checked="" type="checkbox"/>	SANDSTONE [0]	<input checked="" type="checkbox"/>	EXTENSIVE [-2]	
<input type="checkbox"/>	BEDROCK [5]	<input type="checkbox"/>		(Score natural substrates; ignore sludge from point-sources)				<input type="checkbox"/>	RIP/RAP [0]	<input checked="" type="checkbox"/>	MODERATE [-1]	
								<input type="checkbox"/>	LACUSTURINE [0]	<input type="checkbox"/>	NORMAL [0]	
								<input type="checkbox"/>	SHALE [-1]	<input type="checkbox"/>	NONE [1]	
								<input type="checkbox"/>	COAL FINES [-2]			

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Comments

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

<input type="checkbox"/>	UNDERCUT BANKS [1]	<input type="checkbox"/>	POOLS > 70cm [2]	<input type="checkbox"/>	OXBOWS, BACKWATERS [1]	<input type="checkbox"/>	EXTENSIVE >75% [11]
<input checked="" type="checkbox"/>	OVERHANGING VEGETATION [1]	<input type="checkbox"/>	ROOTWADS [1]	<input type="checkbox"/>	AQUATIC MACROPHYTES [1]	<input type="checkbox"/>	MODERATE 25-75% [7]
<input type="checkbox"/>	SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/>	BOULDERS [1]	<input type="checkbox"/>	LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/>	SPARSE 5-<25% [3]
<input type="checkbox"/>	ROOTMATS [1]					<input type="checkbox"/>	NEARLY ABSENT <5% [1]

Comments

Cover
Maximum
203] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input checked="" type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel
Maximum
204] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)
River right looking downstream

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		CONSERVATION TILLAGE	
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> MODERATE 10-50m [3]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> CONSERVATION TILLAGE [1]	<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]	
<input type="checkbox"/> HEAVY / SEVERE [1]		<input type="checkbox"/> NONE [0]		<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]			

Comments

Indicate predominant land use(s)
past 100m riparian.
Riparian
Maximum
105] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH

Check ONE (ONLY!)

- ☐ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☒ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

- ☐ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

- ☐ TORRENTIAL [-1] ☐ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☐ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments

Pool /
Current
Maximum
12Indicate for functional riffles; Best areas must be large enough to support a population
of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH

RUN DEPTH

RIFFLE / RUN SUBSTRATE

RIFFLE / RUN EMBEDDEDNESS

- ☐ BEST AREAS > 10cm [2]
☐ BEST AREAS 5-10cm [1]
☐ BEST AREAS < 5cm [metric=0]

- ☐ MAXIMUM > 50cm [2]
☐ MAXIMUM < 50cm [1]

- ☐ STABLE (e.g., Cobble, Boulder) [2]
☐ MOD. STABLE (e.g., Large Gravel) [1]
☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

- ☐ NONE [2]
☐ LOW [1]
☐ MODERATE [0]
☐ EXTENSIVE [-1]

Comments

Riffle /
Run
Maximum
86] **GRADIENT** (ft/mi) ☐ VERY LOW - LOW [2-4]
DRAINAGE AREA (mi²) ☐ MODERATE [6-10]
☒ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

10

%RUN:

%RIFFLE:

10

Gradient
Maximum
10

A/ SAMPLED REACH

Check ALL that apply

METHOD	STAGE
<input type="checkbox"/> BOAT	1st-sample pass- 2nd
<input type="checkbox"/> WADE	<input type="checkbox"/> HIGH <input type="checkbox"/>
<input type="checkbox"/> L. LINE	<input type="checkbox"/> UP <input type="checkbox"/>
<input type="checkbox"/> OTHER	<input type="checkbox"/> NORMAL <input type="checkbox"/>
	<input type="checkbox"/> LOW <input type="checkbox"/>
	<input type="checkbox"/> DRY <input type="checkbox"/>

DISTANCE

☐ 0.5 Km

☐ 0.2 Km

☐ 0.15 Km

☐ 0.12 Km

☐ OTHER

CLARITY

1st --sample pass--	2nd
<input type="checkbox"/> < 20 cm	<input type="checkbox"/>
<input type="checkbox"/> 20-<40 cm	<input type="checkbox"/>
<input type="checkbox"/> 40-70 cm	<input type="checkbox"/>
<input type="checkbox"/> > 70 cm/ CTB	<input type="checkbox"/>
<input type="checkbox"/> SECCHI DEPTH	<input type="checkbox"/>

meters

CANOPY

☐ > 85%- OPEN

☐ 55%-<85%

☐ 30%-<55%

☐ 10%-<30%

☐ <10%- CLOSED

1st _____	cm
pass	
2nd _____	cm

C/ RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

B/ AESTHETICS

☐ NUISANCE ALGAE

☐ INVASIVE MACROPHYTES

☐ EXCESS TURBIDITY

☐ DISCOLORATION

☐ FOAM / SCUM

☐ OIL SHEEN

☐ TRASH / LITTER

☐ NUISANCE ODOR

☐ SLUDGE DEPOSITS

☐ CSOs/SSOs/OUTFALLS

D/ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA

ACTIVE / HISTORIC / BOTH / NA

YOUNG-SUCCESSION-OLD

SPRAY / SNAG / REMOVED

MODIFIED / DIPPED OUT / NA

LEVEED / ONE SIDED

RELOCATED / CUTOFFS

MOVING-BEDLOAD-STABLE

ARMOURED / SLUMPS

ISLANDS / SCoured

IMPOUNDED / DESICCATED

FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

E/ ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT&GRIME

CONTAMINATED / LANDFILL

BMPs-CONSTRUCTION-SEDIMENT

LOGGING / IRRIGATION / COOLING

BANK / EROSION / SURFACE

FALSE BANK / MANURE / LAGOON

WASH H₂O / TILE / H₂O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

F/ MEASUREMENTS

\bar{x} width

\bar{x} depth

max. depth

\bar{x} bankfull width

bankfull \bar{x} depth

W/D ratio

bankfull max. depth

floodprone x² width

entrench. ratio

Legacy Tree:

Stream Drawing:

Stream & Location: Stream _____ RM: _____ Date: 06/06/06

Scorers Full Name & Affiliation: Gordon Shaw, Burns & _____
River Code: - - - - STORET #: - - - - Lat./ Long.: - - - - 41 - - - - 18 - - - - 2 - - - - Office verified location ☐

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	Substrate 3 Maximum 20
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> GRAVEL [7]	<input type="checkbox"/>	<input checked="" type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> COAL FINES [-2]	<input type="checkbox"/>	<input checked="" type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>					<input type="checkbox"/> MODERATE [-1]	

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Comments _____

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]
<input type="checkbox"/> ROOTMATS [1]		

Comments _____

Cover
Maximum 20
3

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input checked="" type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

Channel
Maximum 20
6

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY	
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]		
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]		
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]		
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]			
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]			

Comments _____

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum 10
9

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check ONE (ONLY!)

- ☐ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☒ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

- ☐ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

- ☐ TORRENTIAL [-1] ☐ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☐ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Comments _____

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)**Pool / Current**
Maximum 12
0

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments _____

Riffle / Run
Maximum 8
n6] GRADIENT (ft/mi) ☐ VERY LOW - LOW [2-4]
DRAINAGE AREA (mi²) ☐ MODERATE [6-10]
☒ HIGH - VERY HIGH [10-6]%POOL: %GLIDE: 1n
%RUN: %RIFFLE: **Gradient**
Maximum 10
1n

AJ SAMPLED REACH

Check ALL that apply

METHOD STAGE

☐ BOAT

☐ WADE

☐ L. LINE

☐ OTHER

1st-sample pass- 2nd

☐ HIGH

☐ UP

☐ NORMAL

☐ LOW

☐ DRY

DISTANCE

☐ 0.5 Km

☐ 0.2 Km

☐ 0.15 Km

☐ 0.12 Km

☐ OTHER

CLARITY

1st --sample pass-- 2nd

☐ < 20 cm

☐ 20-<40 cm

☐ 40-70 cm

☐ > 70 cm/ CTB

☐ SECCHI DEPTH

CANOPY

☐ > 85%- OPEN

☐ 55%-<85%

☐ 30%-<55%

☐ 10%-<30%

☐ <10%- CLOSED

CJ RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

BJ AESTHETICS

☐ NUISANCE ALGAE

☐ INVASIVE MACROPHYTES

☐ EXCESS TURBIDITY

☐ DISCOLORATION

☐ FOAM / SCUM

☐ OIL SHEEN

☐ TRASH / LITTER

☐ NUISANCE ODOR

☐ SLUDGE DEPOSITS

☐ CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA

ACTIVE / HISTORIC / BOTH / NA

YOUNG-SUCCESSION-OLD

SPRAY / SNAG / REMOVED

MODIFIED / DIPPED OUT / NA

LEVEED / ONE SIDED

RELOCATED / CUTOFFS

MOVING-BEDLOAD-STABLE

ARMOURED / SLUMPS

ISLANDS / SCoured

IMPOUNDED / DESICCATED

FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT&GRIME

CONTAMINATED / LANDFILL

BMPs-CONSTRUCTION-SEDIMENT

LOGGING / IRRIGATION / COOLING

BANK / EROSION / SURFACE

FALSE BANK / MANURE / LAGOON

WASH H₂O / TILE / H₂O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

\bar{x} width

\bar{x} depth

max. depth

\bar{x} bankfull width

bankfull \bar{x} depth

W/D ratio

bankfull max. depth

floodprone x² width

entrench. ratio

Legacy Tree:

Stream Drawing:

December 29, 2014

Mr. William Beach, CPG
Supervisor, Energy Delivery Systems
FirstEnergy Corp.
76 South Main Street
Akron, Ohio 44308

Re: Wetland Delineation Report
Lake Avenue Substation Project, Alternate Site
American Transmission Systems, Incorporated
Burns & McDonnell Project No: 65085

Dear Mr. Beach:

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) was retained by American Transmission Systems, Incorporated. (ATSI), a FirstEnergy company, to provide wetland delineation services for the proposed Lake Avenue Substation and associated transmission lines (Project) in Lorain County, Ohio (Figure A-1, Appendix A). This wetland delineation supports efforts to design the Project to avoid and minimize impacts to wetlands and other waters of the U.S. and of the State of Ohio, where possible. The following sections provide information on the proposed Project and summarize the completed wetland delineation.

INTRODUCTION

ATSI plans to construct the new Lake Avenue Substation in the vicinity of the City of Elyria, Lorain County, Ohio. The Project purpose is to improve electric reliability in the area. The proposed Project will include installing a new substation that will provide for transformation from 345 kilovolt (kV) to 138 kV and will interconnect to existing 345 kV and 138 kV overhead transmission lines in the vicinity of the new substation. An Alternate Site for the substation has been identified within Elyria Township. In addition to the substation, ATSI will install new 345 kV and 138 kV transmission extensions from the new Lake Avenue Substation to the nearby existing 345 kV and 138 kV transmission lines in the area. The new substation would likely be located adjacent to or partially under the existing 345 kV transmission lines, while the 138 kV transmission line extensions would be approximately 3,000 feet or more in length.

The Project has the potential to impact wetlands or other waters of the U.S. that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) as designated by Section 404 of the Clean Water Act. A wetland delineation of the Alternate Site and portions of the associated corridors for the 345 kV and the 138 kV transmission extensions (Survey Area) was conducted to evaluate for the presence of waters of the U.S., including streams, creeks, and ponds. The Survey Area encompasses approximately 57 acres.

METHODS

The following discussions summarize the methods used for the review of existing data and the wetland delineation.

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Data Review

Burns & McDonnell reviewed available background information for the Survey Area prior to conducting a site visit. This available background information included:

- U.S. Geological Survey (USGS) 7.5-minute topographic map (1980 Lorain, OH, and 1979 Avon, OH, quadrangles)
- U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps
- National Agriculture Imagery Program (NAIP) aerial photography (2011 and 2013)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2011 Soil Survey Geographic (SSURGO) digital data for Lorain County.

Maps generated from this data are included as Figures A-2 and A-3 in Appendix A.

Wetland Delineation

A wetland delineation was completed in July 2012, in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region – Version 2.0* (Regional Supplement). Sample plots were established at multiple locations and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the Survey Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. Locations of sample plots and other identified features were surveyed using a sub-meter-accurate global positioning system (GPS) unit. Natural color photographs were taken onsite and are included in Appendix C (Photographs C-1 through C-21).

Each delineated wetland was assigned a category using the Ohio Rapid Assessment Method (ORAM) for Wetland Categorization. According to Ohio Administrative Code, Category 1 wetlands have minimal habitat and minimal hydrological and recreational functions. These wetlands do not provide critical habitat for threatened or endangered species. Category 2 wetlands have moderate wildlife habitat or hydrological or recreational functions. Category 2 wetlands are dominated by native vegetation but generally do not contain threatened or endangered species habitat. Category 3 wetlands have superior habitat or hydrological or recreational functions. These wetlands often provide habitat for threatened or endangered species.

The State of Ohio affords different levels of protection to wetlands based on wetland quality. The ORAM 10 Page Form for Wetland Categorization was completed for each delineated wetland and a preliminary ORAM score for each wetland was determined. A copy of the ORAM Summary Worksheet and Wetland Categorization Worksheet for each delineated wetland is located in Appendix D.

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RESULTS

The following sections describe the results of the existing data review and the completed wetland delineation.

Existing Data Review

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential locations of waters of the U.S. (Figure A-2). The topographic maps indicate a slight rise in elevation toward the southwestern corner of the Survey Area. The topographic map also identifies much of the Survey Area as a sandpit. The topographic map indicates the presence of two ponds within the Survey Area; one in the northeastern corner of the Survey Area and one in the center. No streams are indicated on the topographic map.

The USFWS NWI map indicates the presence of four palustrine unconsolidated (PUB) wetlands within the Survey Area; one in the northeastern corner of the Survey Area and one in the north-central portion (Figure A-2). However, wetland presence based only on NWI maps cannot be assumed to be an accurate assessment of potentially occurring jurisdictional wetlands. Wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on a NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands are not always included on NWI maps. As a result, a field visit was conducted to identify any wetlands or other waters of the U.S. that may be present.

The aerial photographs indicate the Survey Area consists largely of forested and unvegetated areas (Figure A-3). In addition, a maintained transmission line right-of-way (ROW) extends from east to west along the southern border of the Survey Area. Ponds are visible in the northeastern corner of the Survey Area.

The NRCS SSURGO digital data indicate that portions of seven soil map units are located on the Survey Area (Figure A-3). These are:

- Dekalb very channery loam, 1 to 6 percent slopes (DkB)
- Fitchville silt loam, 0 to 2 percent slopes (FcA)
- Haskins loam, 0 to 2 percent slopes (HsA)
- Jimtown sandy loam, 0 to 2 percent slopes (JsA)
- Jimtown loam, 0 to 2 percent slopes (JtA)
- Oshtemo sandy loam, 2 to 6 percent slopes (OtB)
- Quarries (Qu)

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Of these seven soil map units, Haskins loam and Fitchville silt loam are included on the local and national hydric soils lists.

Wetland Delineation

Gordon Shaw, senior wetland specialist with Burns & McDonnell, conducted a wetland delineation of the Survey Area in July 2012. The land cover and delineated wetlands and streams are discussed in detail below.

Vegetation. The Survey Area was largely composed of forested areas and maintained ROW. Vegetation in the forested areas was dominated by sugar maple (*Acer saccharum*), eastern cottonwood (*Populus deltoides*), red maple (*Acer rubrum*), and eastern poison ivy (*Toxicodendron radicans*). Vegetation in the maintained ROW included species such as bluegrass (*Poa* spp.), common reed (*Phragmites australis*), eastern poison ivy, and Queen-Anne's lace (*Daucus carota*).

Soils. Typical upland soils were very dark gray (10YR 3/1) or very dark grayish brown (10YR 3/2) in color and silt loam in texture. Typical wetland soils were dark grayish brown (10YR 4/2) in color and silt loam in texture. Redoximorphic features were present in wetland soils but were uncommon in upland soils.

Hydrology. The primary source of hydrology for the wetlands was precipitation. Common indicators of hydrology within the wetlands included the presence of saturation within the upper 12 inches, a concave geomorphic position, and a positive FAC-neutral test.

Jurisdictional Wetland Areas

Eight wetlands and no streams were identified during the wetland delineation (Photographs C-1 through C-21). The wetlands are described below and their locations are shown on Figure A-4, Appendix A. Table 1 provides the type, size, and preliminary ORAM category of each wetland delineated. Sample plots were located in the wetlands and adjacent uplands. Data Forms for these sample plots are included in Appendix B.

Wetland 1 (W-1). Wetland 1 (1.71 acres) is a PUB wetland with a palustrine scrub-shrub (PSS)/palustrine emergent (PEM) wetland fringe located in the northeastern portion of the Survey Area (Figure A-4; Photographs C-3 and C-18). The PUB portion of this wetland encompasses 1.60 acres while the PSS/PEM portion encompasses 0.09/0.02 acre. The wetland is located in an area that was excavated during quarry operations. An approximately 6-foot-wide berm of fill material bisected the PUB wetland (Figure A-4). While vegetation was largely absent from the PUB portion of this wetland, vegetation in the PSS portion was dominated by sandbar willow (*Salix interior*), purple loosestrife (*Lythrum salicaria*), and white grass (*Leersia*

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virginica). Hydrophytic vegetation was indicated by the rapid test for Hydrophytic Vegetation and the Dominance Test. Standing water was present throughout the PUB wetland. Wetland hydrology in the PSS portion of the wetland was indicated by the presence of a water table at 6 inches, saturation at the soil surface, oxidized rhizospheres on living roots, crayfish burrows, and a positive FAC-neutral test of hydrophytic vegetation. Hydric soil in the PSS was indicated by the presence of a depleted matrix (Hydric Soil Indicator F3). W-1 received a preliminary ORAM Category rating of 1.

Table 1: Type and Size of Delineated Wetlands within the Survey Area

Wetland Number	Wetland Type ^a	Acres of Wetland Delineated	Preliminary ORAM Category ^b
W-1	PUB/PSS/PEM	1.71	1
W-2	PUB/PSS/PEM	0.30	1
W-3	PUB	0.03	1
W-4	PEM	0.08	1
W-5	PFO	0.14	2
W-6	PEM	0.63	1
W-8	PUB	0.05	1
W-9	PFO	0.18	1
	Total:	3.39	

(a) Symbols for wetland type: PEM = palustrine emergent, PFO = palustrine forested, PSS = palustrine scrub/shrub, PUB = palustrine unconsolidated bottom

(b) ORAM = Ohio Rapid Assessment Method

Wetland 2 (W-2). Wetland 2 (0.30 acre) is located in the north-central portion of the Survey Area (Figure A-4; Photographs C-5, C-7, and C-19). W-2 is a wetland complex consisting of 0.2-acre PUB wetland, 0.09-acre PSS wetland, and 0.03-acre PEM wetland. The PUB wetland is located in an area that was excavated during quarry operations. Vegetation in the PSS wetland was dominated by black willow (*Salix nigra*) and reed canary grass (*Phalaris arundinaceae*), and vegetation in the PEM portion was dominated by pinkweed (*Persicaria pensylvanica*), white grass, black willow, reed canary grass, and purple loosestrife. Wetland hydrology was indicated by standing water in the PUB and by soil saturation in the upper 10 inches in the wetland fringe. Hydric soil in the PSS and PEM wetland portions was indicated by the presence of a depleted matrix (Hydric Soil Indicator F3). W-2 received a preliminary ORAM Category rating of 1.

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Wetland 3 (W-3). Wetland 3 (0.03 acre) is a PUB wetland located in the western portion of the Survey Area (Figure A-4; Photograph C-20). This wetland, located in an area that was excavated during quarry operations, is surrounded by mature trees, including sugar maple, tuliptree (*Liriodendron tulipifera*), northern red oak, and American beech (*Fagus grandifolia*). W-3 received a preliminary ORAM Category rating of 1.

Wetland 4 (W-4). Wetland 4 (0.08 acre) is a PEM wetland located in the southeastern portion of the Survey Area (Figure A-4; Photograph C-9). Vegetation in this wetland was dominated by common reed. Wetland hydrology was indicated by a concave geomorphic position and a positive FAC-neutral test of hydrophytic vegetation. Hydric soil was indicated by the presence of a depleted matrix (Hydric Soil Indicator F3). This wetland is located in the existing and maintained transmission line ROW. W-4 received a preliminary ORAM Category rating of 1.

Wetland 5 (W-5). Wetland 5 (0.14 acre) is a palustrine forested (PFO) wetland located in the southeastern portion of the Survey Area (Figure A-4; Photograph C-11). Vegetation in this wetland was dominated by eastern cottonwood, red maple, multiflora rose (*Rosa multiflora*), and northern red oak. As multiflora rose, a facultative upland species, is commonly found in wetland areas in this region, this species was not included in the dominance test for hydrophytic vegetation (see Section 5a of Problematic Hydrophytic Vegetation in the Regional Supplement). Primary indicators of wetland hydrology included the presence of water marks, water-stained leaves, and a sparsely vegetated concave surface. Hydric soil was indicated by the presence of a depleted matrix (Hydric Soil Indicator F3). W-5 received a preliminary ORAM Category rating of 2.

Wetland 6 (W-6). Wetland 6 (0.63 acre) is a PEM wetland located in the southwestern portion of the Survey Area (Figure A-4; Photograph C-12). Vegetation in this wetland was dominated by common reed, Simpler's joy (*Verbena hastata*), and glossy buckthorn (*Frangula alnus*). Wetland hydrology was indicated by the presence of oxidized rhizospheres on living roots, a concave geomorphic position, and a positive FAC-neutral test of hydrophytic vegetation. Hydric soil was indicated by the presence of a depleted matrix (Hydric Soil Indicator F3). W-6 received a preliminary ORAM Category rating of 1.

Wetland 8 (W-8). Wetland 8 (0.05 acre) is a PUB wetland located in the east-central portion of the Survey Area (Figure A-4; Photograph C-21). This wetland is located in an area that was excavated during quarry operations. This wetland is surrounded by forest with vegetation including eastern cottonwood, rough-leaf dogwood (*Cornus drummondii*), tall scouring-rush (*Equisetum hyemale*), eastern poison ivy, and creeping jenny (*Lysimachia nummularia*). W-8 received a preliminary ORAM Category rating of 1.

Mr. William Beach, CPG
FirstEnergy Corp.
December 29, 2014
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Wetland 9 (W-9). Wetland 9 (0.18 acre) is a PFO wetland located in the south-central portion of the Survey Area (Figure 4, Appendix I; Photographs C-16 and C-17, Appendix III). Vegetation in this wetland was dominated by eastern cottonwood and red maple. Wetland hydrology in this wetland was indicated by the presence of water marks and by a sparsely vegetated concave surface. Hydric soil was indicated by the presence of a depleted matrix (Hydric Soil Indicator F3). W-9 received a preliminary ORAM Category rating of 1.

SUMMARY

Burns & McDonnell conducted a wetland delineation of the Survey Area in July 2012 to identify wetlands and other waters of the U.S. Eight wetlands and no streams were identified. Seven wetlands received preliminary ORAM Category ratings of 1, and one wetland received a preliminary rating of 2. To avoid the need for a Section 404 permit from the USACE, the Project should be designed to avoid all permanent impacts to wetlands and streams. If impacts cannot be completely avoided, wetland and stream impacts should be minimized and authorization under a Section 404 permit from the USACE will be required.

If you have any questions or require additional information, please contact Gordon Shaw by telephone at (816) 822-3581 or by e-mail at gwshaw@burnsmcd.com.

Sincerely,

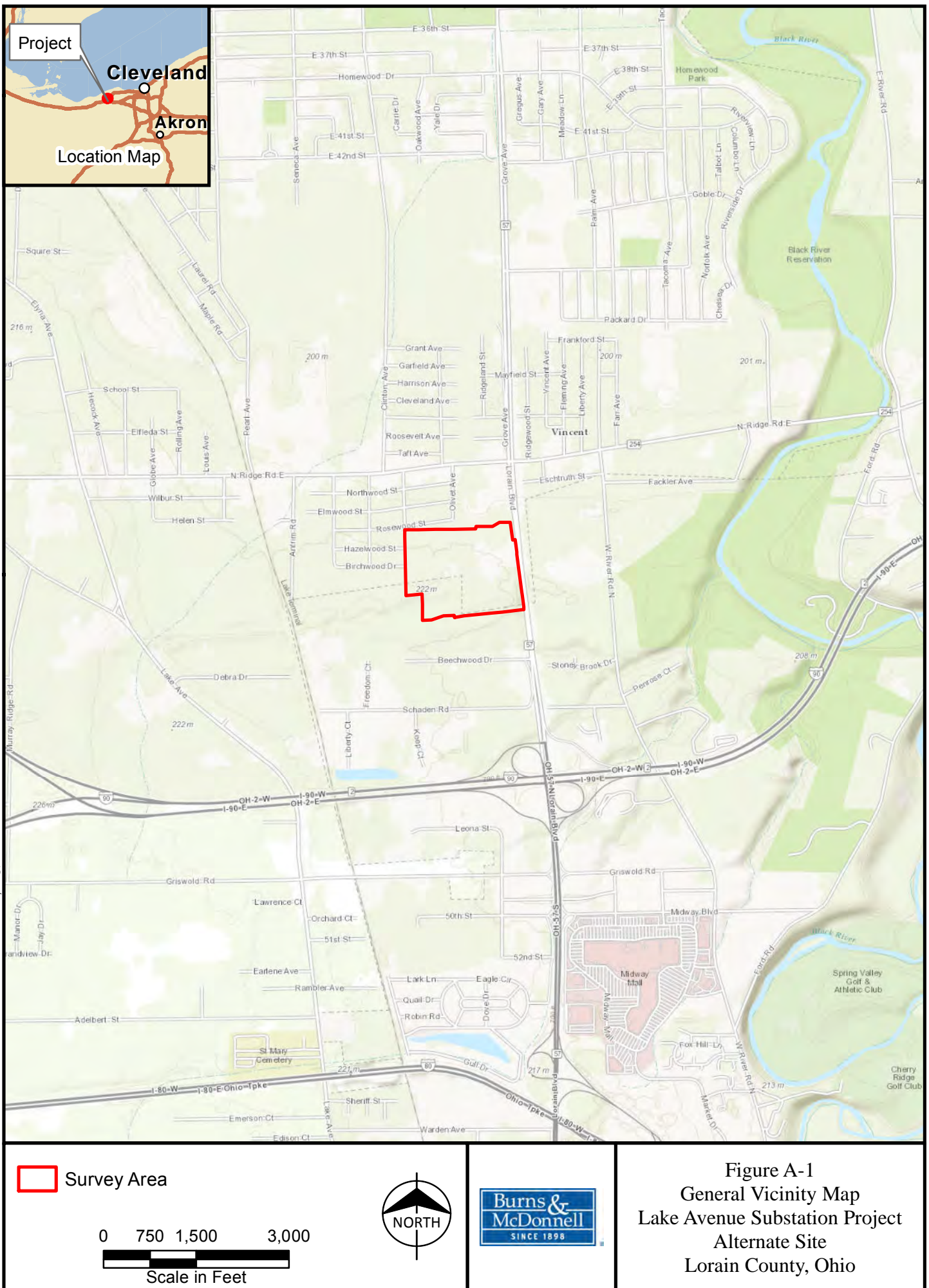
Gordon W. Shaw, PWS, ENV SP
Senior Wetland Specialist

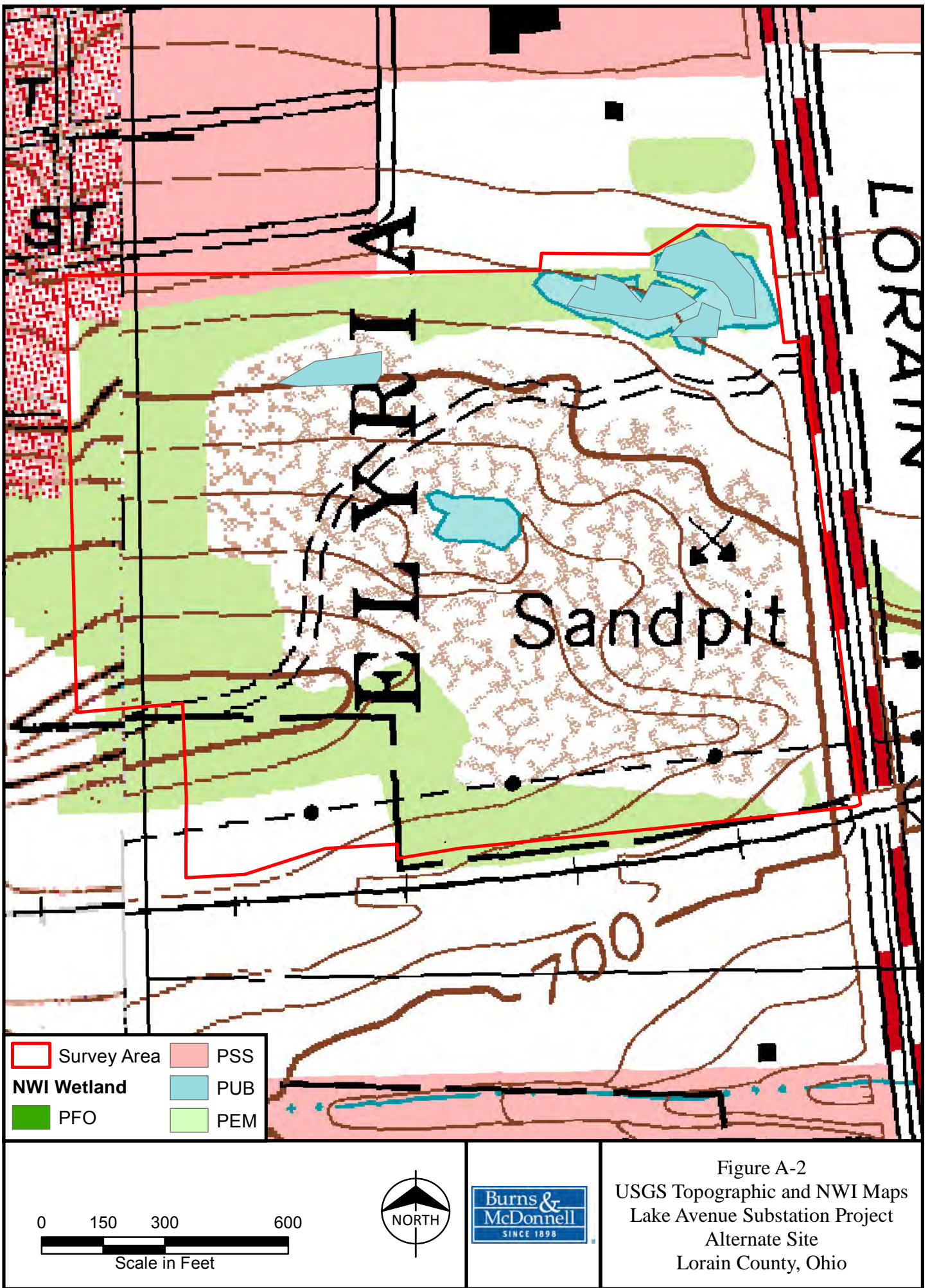
Attachments:

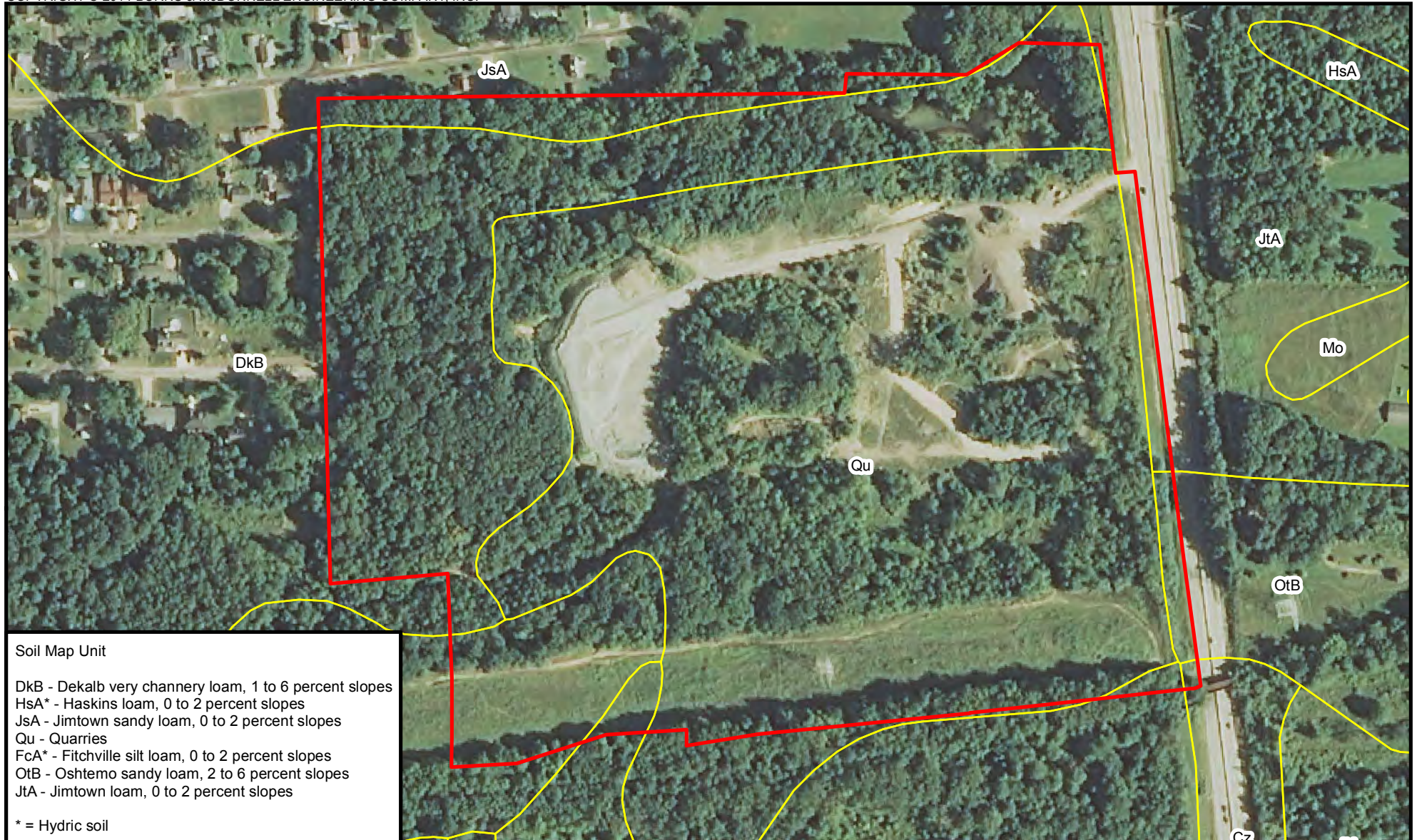
- Appendix A - Figures
- Appendix B - Wetland Determination Forms – NorthCentral and Northeast Region
- Appendix C - Site Photographs
- Appendix D - ORAM Summary and Characterization Worksheets

cc: Kristi Wise, Burns & McDonnell
Rob Everard, Burns & McDonnell

APPENDIX A - FIGURES







Survey Area
 Soil Map Unit

0 150 300 600

 Scale in Feet



Figure A-3
 NRCS Soil Survey Map
 Lake Avenue Substation Project
 Alternate Site
 Lorain County, Ohio

Path: \\ESPSR\\Data\\Projects\\First Energy\\65090_Lake_Avenue_T\\Line\\GIS\\DataFiles\\ArcDocs\\Wetland_Delineation\\Fig4_Delineation_Alternate_Tabloid_2014.mxd gwshaw 12/30/2014
COPYRIGHT © 2014 BURNS & McDONNELL ENGINEERING COMPANY, INC.









- | | | |
|--|---|---|
|  Survey Area | Delineated Wetland (W) |  PEM |
|  Sample Plot (SP) |  PFO |  PUB |
| |  PSS | |



Figure A-4
Wetland Delineation Map
Lake Avenue Substation Project
Alternate Site
Lorain County, Ohio

**APPENDIX B - WETLAND DETERMINATION FORMS –
NORTHCENTRAL AND NORTHEAST REGION**

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/10/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-1
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.415702 Long: -82.120376 Datum: NAD 83
 Soil Map Unit Name: Dekalb very channery loam, 1 to 6 percent slopes NWI Classification: Upland
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology	
Significantly Disturbed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Naturally Problematic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks: Soils are highly disturbed from quarry operations.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>																					
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)																						
Field Observations: <table border="0" style="width: 100%;"> <tr> <th style="width: 20%;"></th> <th style="width: 10%;">Yes</th> <th style="width: 10%;">No</th> <th style="width: 20%;">Depth (inches):</th> </tr> <tr> <td>Surface Water Present?</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Water Table Present?</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center; border-bottom: 1px solid black;">0</td> </tr> <tr> <td>Wetland Hydrology Present?</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td></td> </tr> </table>				Yes	No	Depth (inches):	Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:	
	Yes	No	Depth (inches):																					
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																						
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																						
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																					
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>																						
Remarks: Wetland hydrology indicators A3 and D5 are present.																								

VEGETATION – Use scientific names of plants

 Sampling Point: SP-1

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		<u>0 %</u> = Total Cover			Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: Multiply by: </div> OBL species _____ % x 1 = <u>0</u> FACW species _____ % x 2 = <u>0</u> FAC species _____ % x 3 = <u>0</u> FACU species _____ % x 4 = <u>0</u> UPL species _____ % x 5 = <u>0</u> Column Totals: <u>0 %</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum	(Plot size: 15')				
1. <i>Salix interior</i>		40 %	Y	FACW	
2. <i>Salix nigra</i>		30 %	Y	OBL	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		<u>70 %</u> = Total Cover			
Herb Stratum	(Plot size: 5')				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <i>Eleocharis obtusa</i>		40 %	Y	OBL	
2. <i>Lythrum salicaria</i>		20 %	Y	OBL	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
8. _____		%			
9. _____		%			
10. _____		%			
11. _____		%			
12. _____		%			
		<u>60 %</u> = Total Cover			
Woody Vine Stratum	(Plot size: 30')				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. _____		%			
2. _____		%			
3. _____		%			
4. _____		%			
		<u> % </u> = Total Cover			
Remarks (include photo numbers here or on a separate sheet): Photograph C-1					

SOIL

Sampling Point: SP-1

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Bedrock Depth (inches): 4

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present. Soils in this location are highly disturbed from quarry operations.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/10/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-2
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5
 Subregion (LRR or MLRA): LRR R Lat: 41.415822 Long: -82.120751 Datum: NAD 83
 Soil Map Unit Name: Jimtown sandy loam, 0 to 2 percent slopes NWI Classification: Upland
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
Yes No	Depth (inches):				
Surface Water Present? <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> _____				
Water Table Present? <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> _____				
Saturation Present? <input type="checkbox"/> <input checked="" type="checkbox"/> (includes capillary fringe)	<input type="checkbox"/> _____				
Wetland Hydrology Present? <input type="checkbox"/> <input checked="" type="checkbox"/>					
Remarks: No wetland hydrology indicators are present.					

VEGETATION – Use scientific names of plants

 Sampling Point: SP-2

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Quercus rubra</u>		50 %	Y	FACU	Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>40</u> (A/B)
2. <u>Acer saccharum</u>		30 %	Y	FACU	
3. <u>Sassafras albidum</u>		10 %	N	FACU	
4. <u>Prunus serotina</u>		5 %	N	FACU	
5. _____		%			
6. _____		%			
7. _____		%			
		95 % = Total Cover			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ % x 1 = _____ FACW species _____ % x 2 = _____ FAC species _____ % x 3 = _____ FACU species _____ % x 4 = _____ UPL species _____ % x 5 = _____ Column Totals: _____ % (A) _____ (B) Prevalence Index = B/A = _____
		35 % = Total Cover			Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
		0 % = Total Cover			Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		50 % = Total Cover			
Woody Vine Stratum (Plot size: 15')					
1. <u>Toxicodendron radicans</u>		40 %	Y	FAC	
2. <u>Vitis riparia</u>		10 %	Y	FAC	
3. _____		%			
4. _____		%			
		50 % = Total Cover			
Remarks (include photo numbers here or on a separate sheet): Photograph C-2.					

SOIL

Sampling Point: SP-2

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/10/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-3
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.415438 Long: -82.12032 Datum: NAD 83
 Soil Map Unit Name: Dekalb very channery loam, 1 to 6 percent slopes NWI Classification: PSS (W-1)
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)			

Field Observations:	Yes	No	Depth (inches):	
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>6</u>	
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Remarks: Wetland hydrology indicators A2, A3, C3, C8, and D5 are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-3

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix nigra</u>		5 %	Y	FACW	
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		5 % = Total Cover			
Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix interior</u>		90 %	Y	FACW	
2. <u>Salix nigra</u>		5 %	N	OBL	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		95 % = Total Cover			
Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lythrum salicaria</u>		60 %	Y	OBL	
2. <u>Leersia virginica</u>		30 %	Y	FACW	
3. <u>Alisma subcordatum</u>		5 %	N	OBL	
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
8. _____		%			
9. _____		%			
10. _____		%			
11. _____		%			
12. _____		%			
		95 % = Total Cover			
Woody Vine Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			
2. _____		%			
3. _____		%			
4. _____		%			
		% = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 4 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____ %	x 1 = <u>0</u>
FACW species _____ %	x 2 = <u>0</u>
FAC species _____ %	x 3 = <u>0</u>
FACU species _____ %	x 4 = <u>0</u>
UPL species _____ %	x 5 = <u>0</u>
Column Totals: <u>0</u> % (A)	<u>0</u> (B)

 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
☒ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks (include photo numbers here or on a separate sheet): Photograph C-3.

SOIL

Sampling Point: SP-3

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/10/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-4
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR or MLRA): LRR R Lat: 41.415315 Long: -82.12007 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: Upland

Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology	
Significantly Disturbed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Naturally Problematic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soils are highly disturbed from quarry operations.
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>																							
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)																								
<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">Field Observations:</td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 10%;">Depth (inches):</td> <td style="width: 50%;"></td> </tr> <tr> <td>Surface Water Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> <td rowspan="4" style="vertical-align: top; padding: 5px;">Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:</td> </tr> <tr> <td>Water Table Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> </tr> <tr> <td>Wetland Hydrology Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> </table>			Field Observations:	Yes	No	Depth (inches):		Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:	Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Remarks: No wetland hydrology indicators are present.	
Field Observations:	Yes	No	Depth (inches):																							
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:																						
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																							
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																							
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																								

VEGETATION – Use scientific names of plants

 Sampling Point: SP-4

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Robinia pseudoacacia</u>		40 %	Y	FACU	Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. <u>Populus deltoides</u>		30 %	Y	FAC	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		70 % = Total Cover			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ % x 1 = _____ FACW species _____ % x 2 = _____ FAC species _____ % x 3 = _____ FACU species _____ % x 4 = _____ UPL species _____ % x 5 = _____ Column Totals: _____ % (A) _____ (B) Prevalence Index = B/A = _____
		60 % = Total Cover			Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
		145 % = Total Cover			Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		% = Total Cover			Remarks (include photo numbers here or on a separate sheet): Photograph C-4.

SOIL

Sampling Point: SP-4

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Rock Depth (inches): 2

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present, and soils in this location are highly disturbed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/10/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-5
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.415056 Long: -82.12349 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: PEM (W-2)

Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology	
Significantly Disturbed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Naturally Problematic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils are highly disturbed from quarry operations.
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>																						
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)																							
Field Observations:			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:																						
<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 10%;">Depth (inches):</td> </tr> <tr> <td>Surface Water Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><u> </u></td> </tr> <tr> <td>Water Table Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><u> </u></td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><u>0</u></td> </tr> </table>		Yes	No	Depth (inches):	Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>	<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> </tr> <tr> <td>Wetland Hydrology Present?</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>		Yes	No	Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	Yes	No	Depth (inches):																						
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>																						
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>																						
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>																						
	Yes	No																							
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>																							
Remarks: Wetland hydrology indicators A3 and D2 are present.																									

VEGETATION – Use scientific names of plants

 Sampling Point: SP-5

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		0 %	= Total Cover	
Sapling/Shrub Stratum	(Plot size: 15')			
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		0 %	= Total Cover	
Herb Stratum	(Plot size: 5')			
1. <u>Persicaria pensylvanica</u>		40 %	Y	FACW
2. <u>Leersia virginica</u>		40 %	Y	FAC
3. <u>Sium suave</u>		5 %	N	OBL
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
8. _____		%		
9. _____		%		
10. _____		%		
11. _____		%		
12. _____		%		
		85 %	= Total Cover	
Woody Vine Stratum	(Plot size: 30')			
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
		%	= Total Cover	

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____ %	x 1 = <u>0</u>
FACW species _____ %	x 2 = <u>0</u>
FAC species _____ %	x 3 = <u>0</u>
FACU species _____ %	x 4 = <u>0</u>
UPL species _____ %	x 5 = <u>0</u>
Column Totals: <u>0</u> % (A)	<u>0</u> (B)

 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks (include photo numbers here or on a separate sheet): Photograph C-5.

SOIL

Sampling Point: SP-5

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Bedrock Depth (inches): 4

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present. Soils are highly disturbed from quarry operations.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/10/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-6
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR or MLRA): LRR R Lat: 41.415328 Long: -82.123504 Datum: NAD 83
 Soil Map Unit Name: Dekalb loam, 3 to 8 percent slopes NWI Classification: Upland
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☒ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ ☐ ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soils are highly disturbed from quarry operations.
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)			

Field Observations:	Yes No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Remarks: No wetland hydrology indicators are present.

Sampling Point: SP-6

Tree Stratum		(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer saccharum</i>		60 %	Y	FACU
2.	<i>Quercus rubra</i>		40 %	Y	FACU
3.	<i>Fagus grandifolia</i>		10 %	N	FACU
4.			%		
5.			%		
6.			%		
7.			%		
			110 % = Total Cover		
Sapling/Shrub Stratum		(Plot size: 15')			
1.	<i>Acer saccharum</i>		30 %	Y	FACU
2.	<i>Fagus grandifolia</i>		20 %	Y	FACU
3.			%		
4.			%		
5.			%		
6.			%		
7.			%		
			50 % = Total Cover		
Herb Stratum		(Plot size: 5')			
1.	<i>Parthenocissus quinquefolia</i>		20 %	Y	FACU
2.	<i>Trillium cernuum</i>		5 %	Y	FAC
3.			%		
4.			%		
5.			%		
6.			%		
7.			%		
8.			%		
9.			%		
10.			%		
11.			%		
12.			%		
			25 % = Total Cover		
Woody Vine Stratum		(Plot size: 15')			
1.	<i>Vitis riparia</i>		10 %	Y	FAC
2.			%		
3.			%		
4.			%		
			% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 29% (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species % x 1 = 0

FACW species % x 2 = 0

FAC species % x 3 = 0

FACU species % x 4 = 0

UPL species % x 5 = 0

Column Totals: 0% (A) 0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Remarks (include photo numbers here or on a separate sheet): Photograph C-6.

Sampling Point: SP-6

[illegible]²Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR, K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR, K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR, K, L) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| | | <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present, and soils in this location are highly disturbed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-7
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.414959 Long: -82.122892 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: PSS (W-2)

Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology	
Significantly Disturbed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Naturally Problematic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils are highly disturbed from quarry operations.
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Remarks: Wetland hydrology indicators A3, D2, and D5 are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-7

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		<u>0 %</u>	= Total Cover		Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: Multiply by: </div> OBL species _____ % x 1 = <u>0</u> FACW species _____ % x 2 = <u>0</u> FAC species _____ % x 3 = <u>0</u> FACU species _____ % x 4 = <u>0</u> UPL species _____ % x 5 = <u>0</u> Column Totals: <u>0 %</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum	(Plot size: 15')				
1. <u>Salix nigra</u>		50 %	Y	OBL	
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		<u>50 %</u>	= Total Cover		
Herb Stratum	(Plot size: 5')				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <u>Phalaris arundinacea</u>		50 %	Y	FACW	
2. <u>Lythrum salicaria</u>		20 %	Y	OBL	
3. <u>Lysimachia nummularia</u>		5 %	N	FACW	
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
8. _____		%			
9. _____		%			
10. _____		%			
11. _____		%			
12. _____		%			
		<u>75 %</u>	= Total Cover		
Woody Vine Stratum	(Plot size: 30')				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. _____		%			
2. _____		%			
3. _____		%			
4. _____		%			
		<u> % </u>	= Total Cover		

Remarks (include photo numbers here or on a separate sheet): Photograph C-7.

SOIL

Sampling Point: SP-7

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-8
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.414934 Long: -82.122973 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: Upland
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☒ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ ☐ ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils are highly disturbed from quarry operations.
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
Yes No	Depth (inches):				
Surface Water Present? <input type="checkbox"/> <input checked="" type="checkbox"/>	_____				
Water Table Present? <input type="checkbox"/> <input checked="" type="checkbox"/>	_____				
Saturation Present? <input type="checkbox"/> <input checked="" type="checkbox"/> (includes capillary fringe)	_____				
Wetland Hydrology Present? <input type="checkbox"/> <input checked="" type="checkbox"/>					
Remarks: No wetland hydrology indicators are present.					

VEGETATION – Use scientific names of plants

 Sampling Point: SP-8

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Robinia pseudoacacia</u>		50 %	Y	FACU	
2. <u>Populus deltoides</u>		30 %	Y	FAC	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		80 %	= Total Cover		
Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ulmus rubra</u>		30 %	Y	FAC	
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		30 %	= Total Cover		
Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Toxicodendron radicans</u>		25 %	Y	FAC	
2. <u>Rubus allegheniensis</u>		15 %	Y	FACU	
3. <u>Solidago altissima</u>		10 %	N	FACU	
4. <u>Parthenocissus quinquefolia</u>		10 %	N	FACU	
5. _____		%			
6. _____		%			
7. _____		%			
8. _____		%			
9. _____		%			
10. _____		%			
11. _____		%			
12. _____		%			
		60 %	= Total Cover		
Woody Vine Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Vitis riparia</u>		10 %	Y	FAC	
2. _____		%			
3. _____		%			
4. _____		%			
		10%	= Total Cover		

Remarks (include photo numbers here or on a separate sheet): Photograph C-8.

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____ %	x 1 = <u>0</u>
FACW species _____ %	x 2 = <u>0</u>
FAC species _____ %	x 3 = <u>0</u>
FACU species _____ %	x 4 = <u>0</u>
UPL species _____ %	x 5 = <u>0</u>
Column Totals: <u>0</u> % (A)	<u>0</u> (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤ 3.0 ¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

SOIL

Sampling Point: SP-8

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Bedrock Depth (inches): 6

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present. Soils in this location are highly disturbed from quarry operations.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-9
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.412519 Long: -82.119393 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: PEM (W-4)
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)			

Field Observations:	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Remarks: Wetland hydrology indicators D2 and D5 are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-9

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	%			
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
6. _____	%			
7. _____	%			
	0 %	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. _____	%			
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
6. _____	%			
7. _____	%			
	0 %	= Total Cover		
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Phragmites australis</u>	90 %	Y	FACW	
2. <u>Sonchus arvensis</u>	10 %	N	FACU	
3. <u>Persicaria pensylvanica</u>	5 %	N	FACW	
4. _____	%			
5. _____	%			
6. _____	%			
7. _____	%			
8. _____	%			
9. _____	%			
10. _____	%			
11. _____	%			
12. _____	%			
	105 %	= Total Cover		
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. _____	%			
2. _____	%			
3. _____	%			
4. _____	%			
	%	= Total Cover		

Remarks (include photo numbers here or on a separate sheet): Photograph C-9.

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u> </u> %	x 1 = <u>0</u>
FACW species <u> </u> %	x 2 = <u>0</u>
FAC species <u> </u> %	x 3 = <u>0</u>
FACU species <u> </u> %	x 4 = <u>0</u>
UPL species <u> </u> %	x 5 = <u>0</u>
Column Totals: <u>0</u> % (A)	<u>0</u> (B)

 Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☒ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.
 Hydrophytic Vegetation Present? ☒ Yes ☐ No

SOIL

Sampling Point: SP-9

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-10
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR or MLRA): LRR R Lat: 41.412516 Long: -82.119912 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: Upland
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)

Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology ☐ Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)			
		<input type="checkbox"/> FAC-Neutral Test (D5)			

Field Observations:	Yes No Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/> <input checked="" type="checkbox"/> _____	
Water Table Present?	<input type="checkbox"/> <input checked="" type="checkbox"/> _____	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/> <input checked="" type="checkbox"/> _____	
Wetland Hydrology Present?	<input type="checkbox"/> <input checked="" type="checkbox"/> _____	

Remarks: No wetland hydrology indicators are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-10

Tree Stratum	(Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		<u>0 %</u> = Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15'</u>)			
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		<u>0 %</u> = Total Cover		
Herb Stratum	(Plot size: <u>5'</u>)			
1. <u>Poa compressa</u>		70 %	Y	FACU
2. <u>Agrostis stolonifera</u>		25 %	Y	FACW
3. <u>Daucus carota</u>		10 %	N	UPL
4. <u>Verbascum thapsus</u>		5 %	N	UPL
5. _____		%		
6. _____		%		
7. _____		%		
8. _____		%		
9. _____		%		
10. _____		%		
11. _____		%		
12. _____		%		
		<u>110 %</u> = Total Cover		
Woody Vine Stratum	(Plot size: <u>30'</u>)			
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
		<u>0%</u> = Total Cover		

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u> </u> %	x 1 = <u>0</u>
FACW species <u> </u> %	x 2 = <u>0</u>
FAC species <u> </u> %	x 3 = <u>0</u>
FACU species <u> </u> %	x 4 = <u>0</u>
UPL species <u> </u> %	x 5 = <u>0</u>
Column Totals: <u>0 %</u> (A)	<u>0</u> (B)

 Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.
 Hydrophytic Vegetation Present? ☐ Yes ☒ No

Remarks (include photo numbers here or on a separate sheet): Photograph C-10.

SOIL

Sampling Point: SP-10

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
 - ☐ Histic Epipedon (A2)
 - ☐ Black Histic (A3)
 - ☐ Hydrogen Sulfide (A4)
 - ☐ Stratified Layers (A5)
 - ☐ Depleted Below Dark Surface (A11)
 - ☐ Thick Dark Surface (A12)
 - ☐ Sandy Mucky Mineral (S1)
 - ☐ Sandy Gleyed Matrix (S4)
 - ☐ Sandy Redox (S5)
 - ☐ Stripped Matrix (S6)
 - ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
 - ☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
 - ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
 - ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
 - ☐ Loamy Gleyed Matrix (F2)
 - ☐ Depleted Matrix (F3)
 - ☐ Redox Dark Surface (F6)
 - ☐ Depleted Dark Surface (F7)
 - ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: gravel Depth (inches): 14

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-11
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.412116 Long: -82.119362 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: PFO (W-5)
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☒ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)			

Field Observations:	Yes No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Remarks: Wetland hydrology indicators B1, B8, B9, and D2 are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-11

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus deltoides</u>		50 %	Y	FAC	
2. <u>Acer rubrum</u>		50 %	Y	FAC	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		100 % = Total Cover			
Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rosa multiflora</u>		5 %	Y	FACU	
2. <u>Quercus rubra</u>		5 %	Y	FACU	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		10 % = Total Cover			
Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
8. _____		%			
9. _____		%			
10. _____		%			
11. _____		%			
12. _____		%			
		0 % = Total Cover			
Woody Vine Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			
2. _____		%			
3. _____		%			
4. _____		%			
		% = Total Cover			

Remarks (include photo numbers here or on a separate sheet): Rosa multiflora was dropped from the Dominance Test calculation as prescribed in section 5a of Problematic Hydrophytic Vegetation of the Northeast Regional Supplement.
 Photograph C-11.

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____ %	x 1 = <u>0</u>
FACW species _____ %	x 2 = <u>0</u>
FAC species _____ %	x 3 = <u>0</u>
FACU species _____ %	x 4 = <u>0</u>
UPL species _____ %	x 5 = <u>0</u>
Column Totals: <u>0</u> % (A)	<u>0</u> (B)

 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☒ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Sampling Point: SP-11

[illegible]²Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR, K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR, K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR, K, L) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| | | <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-12
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.412235 Long: -82.122353 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: PEM (W-6)
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Yes No Surface Water Present? <input type="checkbox"/> <input checked="" type="checkbox"/> Water Table Present? <input type="checkbox"/> <input checked="" type="checkbox"/> Saturation Present? <input type="checkbox"/> <input checked="" type="checkbox"/> (includes capillary fringe) Wetland Hydrology Present? <input checked="" type="checkbox"/> <input type="checkbox"/>	Depth (inches): _____ _____ _____	_____ _____ _____	

Remarks: Wetland hydrology indicators C3, D2, and D5 are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-12

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		<u>0 %</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ % x 1 = <u>0</u> FACW species _____ % x 2 = <u>0</u> FAC species _____ % x 3 = <u>0</u> FACU species _____ % x 4 = <u>0</u> UPL species _____ % x 5 = <u>0</u> Column Totals: <u>0 %</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Frangula alnus</u>		5 %	Y	FAC	
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		<u>5 %</u>	= Total Cover		
Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phragmites australis</u>		60 %	Y	FACW	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2. <u>Verbena hastata</u>		20 %	Y	FACW	
3. <u>Impatiens capensis</u>		10 %	N	FACW	
4. <u>Cyperus strigosus</u>		5 %	N	FACW	
5. _____		%			
6. _____		%			
7. _____		%			
8. _____		%			
9. _____		%			
10. _____		%			
11. _____		%			
12. _____		%			
		<u>95 %</u>	= Total Cover		
Woody Vine Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. _____		%			
3. _____		%			
4. _____		%			
		<u>%</u>	= Total Cover		

Remarks (include photo numbers here or on a separate sheet): Photograph C-12.

Sampling Point: SP-12

[illegible]²Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR, K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR, K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR, K, L) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| | | <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-13
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR or MLRA): LRR R Lat: 41.412147 Long: -82.123682 Datum: NAD 83
 Soil Map Unit Name: Jimtown sandy loam, 0 to 2 percent slopes NWI Classification: Upland
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)			

Field Observations:	Yes 	No 	Depth (inches): 	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Remarks: No wetland hydrology indicators are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-13

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		0 %	= Total Cover	
Sapling/Shrub Stratum	(Plot size: 15')			
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		0 %	= Total Cover	
Herb Stratum	(Plot size: 5')			
1. <i>Poa compressa</i>		40 %	Y	FACU
2. <i>Daucus carota</i>		30 %	Y	UPL
3. <i>Agrostis stolonifera</i>		20 %	N	FACW
4. <i>Conyza canadensis</i>		20 %	N	FACU
5. <i>Verbascum thapsus</i>		5 %	N	UPL
6. <i>Leucanthemum vulgare</i>		5 %	N	UPL
7. _____		%		
8. _____		%		
9. _____		%		
10. _____		%		
11. _____		%		
12. _____		%		
		120 %	= Total Cover	
Woody Vine Stratum	(Plot size: 30')			
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
		0 %	= Total Cover	

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u> </u> %	x 1 = <u>0</u>
FACW species <u> </u> %	x 2 = <u>0</u>
FAC species <u> </u> %	x 3 = <u>0</u>
FACU species <u> </u> %	x 4 = <u>0</u>
UPL species <u> </u> %	x 5 = <u>0</u>
Column Totals: <u>0</u> % (A)	<u>0</u> (B)

 Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Remarks (include photo numbers here or on a separate sheet): Photograph C-13.

Sampling Point: SP-13

Northcentral and Northeast Region – Version 2.0

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-18
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR or MLRA): LRR R Lat: 41.412141 Long: -82.120135 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: Upland

Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology	
Significantly Disturbed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Naturally Problematic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soil was disturbed during transmission line construction.
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>																							
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)																								
<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">Field Observations:</td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 10%;">Depth (inches):</td> <td style="width: 50%;"></td> </tr> <tr> <td>Surface Water Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> <td rowspan="4" style="vertical-align: top; padding: 5px;">Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:</td> </tr> <tr> <td>Water Table Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> </tr> <tr> <td>Wetland Hydrology Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> </table>			Field Observations:	Yes	No	Depth (inches):		Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:	Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Remarks: No wetland hydrology indicators are present.	
Field Observations:	Yes	No	Depth (inches):																							
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:																						
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																							
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																							
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																								

VEGETATION – Use scientific names of plants

 Sampling Point: SP-18

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>		60 %	Y	FACU
2. <u>Acer rubrum</u>		40 %	Y	FAC
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		100 % = Total Cover		
Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>		40 %	Y	FAC
2. <u>Tilia americana</u>		30 %	Y	FACU
3. _____		%		
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
		70 % = Total Cover		
Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>		20 %	Y	FAC
2. <u>Carpinus caroliniana</u>		10 %	Y	FAC
3. <u>Polygonatum biflorum</u>		5 %	N	FACU
4. _____		%		
5. _____		%		
6. _____		%		
7. _____		%		
8. _____		%		
9. _____		%		
10. _____		%		
11. _____		%		
12. _____		%		
		35 % = Total Cover		
Woody Vine Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. _____		%		
2. _____		%		
3. _____		%		
4. _____		%		
		% = Total Cover		

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 6 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____ %	x 1 = _____
FACW species _____ %	x 2 = _____
FAC species _____ %	x 3 = <u>0</u>
FACU species _____ %	x 4 = <u>0</u>
UPL species _____ %	x 5 = <u>0</u>
Column Totals: _____ % (A)	<u>0</u> (B)

 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.
 Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks (include photo numbers here or on a separate sheet): Photograph C-14.

SOIL

Sampling Point: SP-18

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
 - ☐ Histic Epipedon (A2)
 - ☐ Black Histic (A3)
 - ☐ Hydrogen Sulfide (A4)
 - ☐ Stratified Layers (A5)
 - ☐ Depleted Below Dark Surface (A11)
 - ☐ Thick Dark Surface (A12)
 - ☐ Sandy Mucky Mineral (S1)
 - ☐ Sandy Gleyed Matrix (S4)
 - ☐ Sandy Redox (S5)
 - ☐ Stripped Matrix (S6)
 - ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
 - ☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
 - ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
 - ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
 - ☐ Loamy Gleyed Matrix (F2)
 - ☐ Depleted Matrix (F3)
 - ☐ Redox Dark Surface (F6)
 - ☐ Depleted Dark Surface (F7)
 - ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Gravel Depth (inches): 6

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-19
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR or MLRA): LRR R Lat: 41.413255 Long: -82.119167 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: Upland

Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology	
Significantly Disturbed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Naturally Problematic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations:			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Wetland hydrology indicator D5 is present.					

VEGETATION – Use scientific names of plants

 Sampling Point: SP-19

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus deltoides</u>		40 %	Y	FAC	Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		40 %	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ % x 1 = <u>0</u> FACW species _____ % x 2 = <u>0</u> FAC species _____ % x 3 = <u>0</u> FACU species _____ % x 4 = <u>0</u> UPL species _____ % x 5 = <u>0</u> Column Totals: <u>0</u> % (A) <u>0</u> (B) Prevalence Index = B/A = _____
					Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
					Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
					Remarks (include photo numbers here or on a separate sheet): Photograph C-15.
					Woody Vine Stratum (Plot size: 30')
					Herb Stratum (Plot size: 5')
					Sapling/Shrub Stratum (Plot size: 15')
					Tree Stratum (Plot size: 30')

SOIL

Sampling Point: SP-19

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-20
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.412851 Long: -82.121688 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: PFO (W-9)
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☒ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ ☐ ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soil at this location was highly disturbed during quarry operations.
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:	Yes <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Depth (inches): _____ _____ _____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?				
Water Table Present?				
Saturation Present? (includes capillary fringe)				
Wetland Hydrology Present?				

Remarks: Wetland hydrology indicators B1, B8, B9, and D2 are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-20

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus deltoides</u>		80 %	Y	FAC	
2. <u>Acer rubrum</u>		20 %	Y	FAC	
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		100 % = Total Cover			
Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>		20 %	Y	FAC	
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		20 % = Total Cover			
Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			
2. _____		%			
3. _____		%			
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
8. _____		%			
9. _____		%			
10. _____		%			
11. _____		%			
12. _____		%			
		0 % = Total Cover			
Woody Vine Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____		%			
2. _____		%			
3. _____		%			
4. _____		%			
		% = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____ %	x 1 = <u>0</u>
FACW species _____ %	x 2 = <u>0</u>
FAC species _____ %	x 3 = <u>0</u>
FACU species _____ %	x 4 = <u>0</u>
UPL species _____ %	x 5 = <u>0</u>
Column Totals: <u>0</u> % (A)	<u>0</u> (B)

 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Remarks (include photo numbers here or on a separate sheet): Photograph C-16.

SOIL

Sampling Point: SP-20

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Gravel Depth (inches): 8

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Avenue Substation Project City/County: Lorain County Sampling Date: 7/11/2012
 Applicant/Owner: American Transmission Systems, Inc. State: OH Sampling Point: SP-21
 Investigator(s): G. Shaw Section, Township, Range: T6N, R17W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR R Lat: 41.413076 Long: -82.121427 Datum: NAD 83
 Soil Map Unit Name: Quarries NWI Classification: Upland
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)
 Significantly Disturbed? ☐ Vegetation ☒ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No
 Naturally Problematic? ☐ ☐ ☐ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	Remarks:
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soils are highly disturbed from quarry operations.
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (minimum of two required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)			

Field Observations:	Yes	No	Depth (inches):	
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Remarks: No wetland hydrology indicators are present.

VEGETATION – Use scientific names of plants

 Sampling Point: SP-21

Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Liriodendron tulipifera</u>		50 %	Y	FACU	Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>40%</u> (A/B)
2. <u>Acer rubrum</u>		40 %	Y	FAC	
3. <u>Fraxinus americana</u>		10 %	N	FACU	
4. _____		%			
5. _____		%			
6. _____		%			
7. _____		%			
		100 % = Total Cover			Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: Multiply by: </div> OBL species _____ % x 1 = <u>0</u> FACW species _____ % x 2 = <u>0</u> FAC species _____ % x 3 = <u>0</u> FACU species _____ % x 4 = <u>0</u> UPL species _____ % x 5 = <u>0</u> Column Totals: <u>0</u> % (A) <u>0</u> (B) Prevalence Index = B/A = _____
		60 % = Total Cover			
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		60 % = Total Cover			Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
		60 % = Total Cover			
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		60 % = Total Cover			
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		60 % = Total Cover			Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		60 % = Total Cover			
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SOIL

Sampling Point: SP-21

Profile Description: *(Describe to the depth needed to document the indicator or confirm the absence of indicators.)*

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR, K, L**)
- ☐ Thin Dark Surface (S9) (**LRR, K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR, K, L**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Gravel Depth (inches): 6

Hydric Soil Present?

☐ Yes ☒ No

Remarks: No hydric soil indicators are present. Soils in this location are highly disturbed.

APPENDIX C - SITE PHOTOGRAPHS



Photograph C-1: View of upland sample plot (SP)-1 adjacent to wetland (W)-1, looking north.



Photograph C-2: View of upland SP-2 adjacent to W-1, looking north.



Photograph C-3: View of SP-3 in PSS W-1, looking southeast.



Photograph C-4: View of upland SP-4 adjacent to W-1, looking east.



Photograph C-5: View of SP-5 in PEM wetland fringe of W-2, looking southeast.



Photograph C-6: View of upland SP-6 adjacent to W-2, looking east.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/6/2015 3:48:06 PM

in

Case No(s). 14-2162-EL-BSB

Summary: Application for Lake Avenue Substation (Part 7 of 11) electronically filed by Mr. Robert J Schmidt on behalf of American Transmission Systems Inc.